From Information Inequalities to Computational Lower Bounds in Learning

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Emmanuel Abbé
EPFL, Switzerland
Email: emmanuel.abbe@epfl.ch

Abstract

This talk shows how computational lower bounds in learning, which allow to show failure at learning certain function classes due to computational constraints, can be derived using information-theoretic arguments and inequalities. In particular, it is shown that GD-based deep learning cannot learn with polynomial parameters certain function classes that can be learned efficiently with other non-GD based algorithms.

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